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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/725,190

11/29/2003

Douglas Wooff

50325-0842

9853

29989

7590

11/09/2006

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EXAMINER

VU, TUAN A

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 11/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/725,190	Applicant(s) WOOFF ET AL.	
	Examiner Tuan A. Vu	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the application filed 11/29/2003.

Claims 1-42 have been submitted for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mathur, USPN: 5,008,814 (hereinafter Mathur), in view of Kwok et al., USPN: 6,535,924 (hereinafter Kwok).

As per claim 1, Mathur discloses a method of software loading and initialization in a distributed network of nodes, the method comprising the computer-implemented steps of:

providing a master node and storage means on said master node for storing software packages and boot program (e.g. Fig. 3; N_s , N_o – col. 5, line 3-20; *ILP* – col 7, lines 40-64 – Note: non-volatile storage for keeping cutover software for ILP in case of need reads on storage of boot package for regressing – see col. 3 line 65 to col. 4, line 49) that the nodes in the network will be using as well as older versions that are kept for regressing a node back to a previous boot program or software package version (Fig. 3; Fig. 5);

providing node information storage means on said master node for storing preferred software version information, node type, and other pertinent information each node in the network (e.g. col. 3 line 65 to col. 4, line 49; *new version, identifies node ...privileges* - col. 5,

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line 3-30; col. 9, line 36 to col. 10, line 8 – Note: version and node identification in a list being stored for cutback after a failure in a *softload* reads on a node type and a trial version to be rolled back);

wherein a node performing an initial boot requests a boot program and software packages from said master node (*message receiver* – Fig. 3);

retrieving said node's preferred software version information from said node information storage means (e.g. col. 5, line 3-30; col. 9, line 36 to col. 10, line 8; col. 7, lines 24-44);

extracting boot program and software packages from said software package storage means using said node's preferred software version information; delivering the extracted software packages to said node (e.g. col. 5, line 31 to col. 6, line 54; step 202 - Fig. 2);

wherein said node stores the extracted boot program (*initial boot program* – col. 3, line 32-41) and software packages in its local persistent storage and wherein software version information is extracted from the software packages and stored in the local persistent storage (step 204, step 211 – Fig. 2); and

wherein said node reboots and executes the boot program stored in the local persistent storage (e.g. col. 3 line 65 to col. 4, line 49 – Note: each node storing of a trial version at local NVRAM reads on reboots using ILP software being downloaded from the N_S master node – see Fig. 3).

However, Mathur does not disclose that the boot program is a boot image; nor does Mathur disclose delivering the boot image from the master node to network node. But based on the message from a node to request a package requiring a ILP by Mathur, the need to extract boot program from a package being received for such request with which to effect an attempt to

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boot (see: *fails to ILP, trial use* -col. 7, lines 15-63) is strongly implied. In a multimode system with software upgrade and/or backup and topology-based routing analogous to Mathur's distribution, Kwok discloses a Master node –GMCC- storing a master image and send such image to element of group so that each node receiving such image will try to re-boot using such new image (see Fig. 4). Hence, it would have been obvious for one skill in the art at the time the invention was made to provide Mathur's backup and rollback distribution with Kwok's way of providing a boot image to the network nodes from the master node, because that each node-specific environment included in the image of the boot image --as by Kwok -- to perform the corresponding upgrade operation not only to successfully boot at the node OS low-level but also enable such boot to cooperate with the activation the software package as purported by Mathur.

As per claim 2, Mathur discloses wherein said node, based on a command from said master node, does not store the software packages in the local persistent storage device, allowing said master node to download test software packages to said node and temporarily run said node using the test software packages (Fig. 2 – Note: master node transmitted version to local node reads on local node not having it stored locally prior to transmission – see step 204, step 211 – Fig. 2), and wherein when said node reboots, the test software packages will no longer exist on said node (step 210 – Fig. 2 – Note: trial run leading to a cutback reads on not having the bad trial software upon reboot – see col. 12, line 46-60 – where only one trial version remains after a failure and cutback).

As per claim 3, Mathur discloses wherein said retrieving step creates said node's preferred software version information from said node information storage means based on

functional features requested by said node (e.g. *new version* --col. 5, line 3-30; col. 7, lines 24-44; Fig. 2)

As per claim 4, Mathur discloses wherein said node verifies the software version information with said master node (step 204, step 211 – Fig. 2).

As per claim 5, Mathur discloses wherein if said node has the correct software versions, then said node completes booting by executing the software packages stored in the local persistent storage (step 211, Fig. 2; col. 3 line 65 to col. 4, line 49).

As per claim 6, Mathur discloses wherein if said node does not have the correct software versions, said master node retrieves correct software packages from said software package storage means and sends the correct software packages to said node, and wherein said node stores the correct software packages in the local persistent storage and completes booting by executing the correct software packages stored in the local persistent storage (e.g. check consistency -Fig. 2).

As per claim 7, Mathur discloses wherein the master node has the ability to categorize nodes into classes where all of the nodes in a particular class of nodes have the same software configuration (e.g. hierarchical structure, privileges – col. 5, lines 3-27 – Note: structure representing grouping of nodes according to some particular privilege configuration reads on class of nodes of same configuration but different processor) and may have differing processor types.

As per claim 8, Mathur does not disclose that the master node storage of the software package contains version information, dependency information, and other metadata information pertaining to software in the package; however teaches about administrator action based on

topology of common path to node for routing, and hierarchy of privileges of nodes and checksum of software destined for distribution (e.g. col 3, line 15-32; col. 5, lines 3-27; consistency check-- Fig. 2); hence the concept of grouping nodes for dependency over the network topological path, the access privileges and new software information needed would be suggestive of metadata for such dependency to support the node distribution. Based on the boot image teaching by Kwok wherein an image would imply storing the specifics of a particular node OS environment, it would have been obvious for one skill in the art at the time the invention was made to provide the administrator or the source node-- master node -- with stored metadata relating to version information, dependency information as mentioned above; because this metadata would support the consistency checking as endeavored by Mathur in view of the topology-based for optimizing routing resources and also for identifying access privilege per nodes as mentioned above.

As per claim 9, Mathur (in view of Kwok) discloses wherein a boot image is customized for a particular type of node and provides basic low-level communications (*initial boot program* -- col. 3, line 32-41; Fig. 2 -- Note: checking of checksum by master node in view of software to boot the node reads on boot image having node identification and low-level instructions, because without node type specificity is provided no proper reboot would be possible).

As per claim 10, Mathur (in view of Kwok) discloses a method of software loading and initialization in a distributed network of nodes, the method comprising the computer-implemented steps recited in claim 1; hence the rejection for such steps will incorporate the corresponding rejection as set forth therein respectively.

As per claim 11, Mathur (in view of Kwok) discloses wherein said node stores the extracted boot image and software packages in its local persistent storage (Fig. 1; col. 3 line 65

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to col. 4, line 49) and wherein software version information is extracted from the software packages and stored in the local persistent storage (e.g. col. 7, lines 32-53; col. 6, lines 41-54 – Note: packet reception of new software and for ILP for storage at node **reads on** extraction of package received based on version, checksum, packet time etc.).

As per claims 12-16, refer to claims 2, 4-7, respectively.

As per claim 17, refer to claim 8.

As per claims 18, 20, refer to claims 9, 3, respectively.

As per claim 19, Mathur (in view of Kwok) discloses wherein said master node places the boot images and software packages in said software package storage means and the node information in said node information storage (re claim 1; col 3, line 15-32; col. 5, lines 3-27; consistency check-- Fig. 2) but does not explicitly disclose wherein a user installs a composite image onto said master node which is executed and creates boot images, software packages, and node information; but Mathur mentions about a user with controller and interfacing means to enable maintenance of node distribution and software upgrade (see col. 3, lines 3-41). In view of the boot image by Kwok whereby node-specific environment parameters are stored in the image, it would have been obvious for one skill in the art at the time the invention was made to provide a user as earlier mentioned by Mathur or Kwok (step 401 –Fig. 4) for creating a image used in the reboot process by Mathur, such that such reboot image contains ILP image program, network characteristic, node topology and new software program so that this is stored in the master node for execution prior to attempt to distribute to the network slave nodes. One would be motivated to do so because the success of the node trial (see Mathur: Fig. 2) with regard to the new software may depend on specific platform and network conditions, and the way to pack

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all the node information needed by Mathur to effect a successful trial and ILP would be optimized via such packaging by an user who is assigned to study the network topology (col 3, line 15-32) and the software version, network protocol information, the node access privileges (see claim 8); that is, packing all such metadata, node identification/privilege and network support information in one distributed package including the boot image so that when extracted and checked, a successful download, software activation and ILP (see Mathur: col. 6, line 40 to col. 7, line 24) would be more likely than have the distribution reeffected after failed attempts, which Mathur does not contemplate.

As per claim 21, Mathur (in view of Kwok) discloses a computer-readable medium carrying one or more sequences of instructions for software loading and initialization in a distributed network of nodes, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps recited in claim 1; hence the rejection for such steps will incorporate the corresponding rejection as set forth therein respectively.

As per claims 22-27, refer to claims 11-16, respectively.

As per claim 28, refer to claim 17.

As per claims 29, 31, refer to claims 18, 20, respectively.

As per claim 30, refer to claim 19.

As per claim 32, Mathur (in view of Kwok) discloses an apparatus of software loading and initialization in a distributed network of nodes, comprising a master node and storage means with node information for supporting network node request and delivery including boot image and software packages as recited in claim 1; hence the rejection for all such limitations or means will incorporate the corresponding rejection as set forth therein respectively.

As per claims 33-38, refer to claims 22-26, respectively.

As per claim 39, refer to claim 28.

As per claims 40, 42, refer to claims 29, 31, respectively.

As per claim 41, refer to claim 30.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (272) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571)272-3756.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence - please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read "Tuan A Vu", with a long horizontal flourish extending to the right.

Tuan A Vu
Patent Examiner,
Art Unit 2193
November 05, 2006